

METHOD FOR FORMING PHOTO-DEFINED MICRO ELECTRICAL CONTACTS

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a Continuation-In-Part of pending U.S. Patent Application
Serial No. 10/027,146, filed December 20, 2001, ^{PAT 6,906,540} which claims the benefit of U.S.
Provisional Patent Application Serial No. 60/323,651, filed September 20, 2001, both
of which are incorporated by reference herein in their entirety.

BACKGROUND OF THE INVENTION

(1) Field of the Invention

This invention relates to a method for the manufacture of miniature micro
probes or electrical contacts for use in testing semiconductor chips.

(2) Description of the Related Art

It is known in the art of testing probe cards for electrical continuity to perform
such tests using probes made by mechanically forming a straight piece of fine wire
into a desired shape so as to provide the necessary size and spring force. Figures 1-3
show a conventional "Cobra™" probe test head produced by Wentworth Laboratories,
Inc. of Brookfield, Connecticut. Such probe heads consist of an array of probes
held between opposing first (upper) and second (lower) dies. Each probe has
opposing upper and lower ends. The upper and lower dies contain patterns of
holes corresponding to spacing on an integrated circuit contact pad spacing designated
herein as lower die hole pattern and upper die hole pattern. The upper end of each of
the probes is retained by the upper die hole pattern, and the lower end of each of the
probes passes through the lower die hole pattern and extends beyond the lower die
to terminate in a probe tip. With reference to Fig. 13, there is illustrated the additional
inclusion of mounting film 1301. Mounting film 1301 is typically formed from a
suitable polymeric dielectric such as mylar and holds the etched probes in place.
For Cobra™ style probes, the lower die hole pattern is offset from that in the upper
die, and the offset is formed into the probe such that the probe acts like a spring.
Returning to Figs. 1-3, when the test head is brought into contact with a wafer to be
tested, the upper end of the probe remains predominately stationary, while the lower